

REMARKS

Claims 1-11 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1, 3, 4, 6, 7, 9, 10 and 11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Asakura et al. (U.S. Pat. No. 6,806,938). This rejection is respectfully traversed.

Claims 1, 7 and 11 require that each wiring line intersect at least one first electrode other than the corresponding first electrode at intersecting sections **in the display area**. Claims 1, 7 and 11 further require that each of the first electrodes be supplied with a first voltage when selected and a second voltage when not selected and that a first effective value of a voltage applied to the liquid crystals at the intersecting sections be smaller than a second effective value of a voltage applied to a pixel for turning on the pixel.

Asakura cannot anticipate claim 1. First of all, Asakura does not disclose intersecting sections in the display area. Asakura et al. defines area "3" as the "display area", and the intersecting sections are located outside the display area 3. "Display area" is known in the art as an area in which an image is displayed. Asakura does not provide a special meaning for this term and does not use this term differently. By designating area 3 as a "display area", Asakura does not intend any area (such as area 4 illustrated in the outstanding Office Action) other than area 3 to be a "display area".

In our prior Response to the Office Action mailed December 11, 2006, Applicant stated that the display area of the claims 1, 7 and 11 is defined by the entire area inside the sealing material. Applicant meant that the sealing material fixes and marks the boundaries of the display area. In other words, the display area is made possible to extend to the inside edges of the sealing material in the present application. This statement does not change the plain and ordinary meaning of "display area," in which an image is displayed. The Examiner misunderstood and incorrectly interpreted Applicant's statement to mean that the display area is defined as the entire area inside the sealing material and thus the conclusion based on this incorrect interpretation is erroneous.

Figures 4, 8, 9A, 9B, 11 of Asakura and the relevant disclosure show that "area 4" illustrated in the outstanding office action cannot be the display area. In Figure 4, a conductor 30 for connecting the common electrode and the wiring pattern is provided between area 3 and the sealing material 7 (see col. 8, lines 62-67), and thus the area in which the conductor 30 is formed cannot be a display area. In Figures 8, 9A, 9B and 11, an uneven gap is formed in the area between area 3 and the sealing material 7. The uneven gap is not desirable for a uniform display (see col. 12, lines 24-30) and thus the area in which the uneven gap is formed cannot be a display area.

Further, Asakura is silent as to the voltage applied to the intersecting sections. Claim 1 requires that the a first effective value of a voltage applied to the liquid crystals at the intersecting sections be smaller than a second effective value of a voltage applied to a pixel for turning on the pixel. To help explain the differences between the present

application and a prior art liquid crystal display in terms of the voltage relationship, the different voltage values are listed below:

- A) a first voltage is a voltage applied to the first electrode when selected;
- B) a second voltage is a voltage applied to the first electrode when not selected;
- C) a voltage applied to one of the second electrode for turning on a pixel;
- D) a voltage applied to one of the second electrode for turning off a pixel;

V_{cross} (a first effective value of a voltage): based on a difference between A) and B);

V_{on} (a second effective value of a voltage): based on a difference between A) and C);

V_{off} (a third effective value of a voltage): based on a difference between A) and D).

Claim 1 requires V_{cross} be smaller than V_{on} , and claim 3 requires that V_{cross} be smaller than V_{off} .

The Examiner asserted that “when the effective value of the voltage applied to the liquid crystals at cross sections is greater than the effective value of the voltage applied to the pixel for turning on/off the pixel, the actual effective value of the voltage applied to pixel is changed, which causes an unexpected display operation in terms of gradation control for the display device.” The Examiner further asserted that “it is

required for Asakura's display to specify the first effective value of a voltage applied to the liquid crystals at the cross sections being smaller than a second/third effective value of a voltage applied to a pixel for turning on/off the pixel in order to display image properly."

The Examiner's assertions, however, find no support from Asakura and are based on impermissible hindsight.

A typical simple matrix liquid crystal display generally requires an effective value of a voltage applied to a pixel for the purpose of turning on the pixel, wherein the effective value of a voltage is the difference between the voltage of the common electrode (i.e., the first electrode), and the voltage of the segment electrode (second electrode). In contrast, V_{cross} of Claim 1 is the voltage difference between the voltage applied to the common electrode when selected and the voltage applied to the common electrode when not selected. A prior art liquid crystal display may specify a relationship between V_{on} (equation 1 of the present application) and V_{off} (equation 2 of the present application), which is different from the relationship between V_{cross} and V_{on} of claim 1. Moreover, V_{cross} does not have to be smaller than V_{on} in order to turn on a pixel. There may be situations where the effective value of the voltage applied to the liquid crystals at the intersecting sections is greater than the effective value of the voltage applied to the pixel for turning on the pixel. Because the prior art liquid crystal display does not usually specify a particular relationship between V_{cross} and V_{on} and between V_{cross} and V_{off} , the Examiner's assertion that Asakura inherently discloses this voltage relationship is based on impermissible hindsight. Accordingly, Applicant respectfully requests that the rejection of claims 1, 7 and 11 be withdrawn.

Claims 3, 4, 9, 10 depend on claims 1 and 7, respectively, and distinguish over these references for at least the reasons stated above in connection with claims 1 and 7. Accordingly, Applicant respectfully requests that the rejections of claims 3, 4, 9 and 10 be withdrawn.

Claim 6 is directed to electronic equipment provided with the liquid crystal device according to claim 1 and thus is distinguishable over Asakura for at least the reasons stated above in connection with claim 1. Accordingly, Applicant respectfully requests that the rejection of claim 6 be withdrawn.

REJECTION UNDER 35 U.S.C. § 103

Claims 2 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Asakura et al. (U.S. Pat. No. 6,806,938) in view of Nomura et al. (U.S. Pat. No. 6,236,385). This rejection is respectfully traversed.

Claims 2 and 8 depend on claims 1 and 7, respectively. Nomura et al. cannot make claim 2 and 8 obvious because Nomura et al. does not disclose any intersecting sections in the display area, let alone the voltage applied to the intersecting sections. Accordingly, Applicant respectfully requests that the rejection of claim 5 be withdrawn.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Asakura et al. (U.S. Pat. No. 6,806,938) in view of Morimoto et al. (U.S. Pat. No. 6,181,406). This rejection is respectfully traversed.

Claim 5 is a dependent claim of claim 1. Morimoto et al. cannot make claim 5 obvious because Morimoto et al. does not disclose any intersecting sections in the display area, let alone the voltage applied to the intersecting sections. Accordingly, Applicant respectfully requests that the rejection of claim 5 be withdrawn.

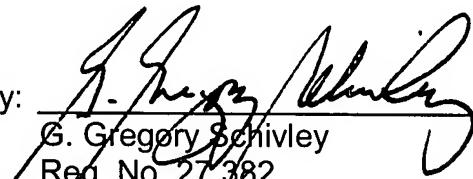
NEW CLAIM

Claim 12 has been added, which depends on claim 1 and thus is distinguishable over the cited references for at least the reasons stated above in connection with claim 1. Accordingly, favorable consideration of claim 12 is respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

By: 

G. Gregory Schivley
Reg. No. 27,382
Bryant E. Wade
Reg. No. 40,344

Dated: August 2, 2007

HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 828
Bloomfield Hills, Michigan 48303
(248) 641-1600

GGS/BEW/LHW/src